

**CLAIMS**

What is claimed is:

- 1           1.       A hanger bearing assembly for use in an auger type poultry chiller, the  
2       poultry chiller having an auger with a first flight and a second flight secured to an auger  
3       shaft, the first flight having a first flange plate and the second flight having a second  
4       flange pate, said hanger bearing comprising:  
5               a bearing disk secured between the first flange plate and the second flange plate;  
6               a bearing block disposed about said bearing disk;  
7               a lower bearing plate secured to the poultry chiller, the lower bearing plate having  
8       a support segment configured to receive said bearing block;  
9               an upper bearing plate configured to receive said bearing block;  
10              wherein said upper bearing plate is secured to said lower bearing plate, thereby  
11       maintaining said bearing block adjacent said bearing disk and securing the auger to said  
12       lower bearing plate, and  
13              a conical deflector mounted on said auger shaft adjacent said hangar bearing for  
14       urging the birds radially about said hangar bearing.

1           2.       The hanger bearing assembly of claim 1, further comprising:  
2           a coupling aperture disposed in said bearing disk along a central longitudinal axis  
3 of said bearing disk;  
4           a first coupling recess disposed in said first flange plate;  
5           a second coupling recess disposed in said second flange plate;  
6           a coupling shaft; and  
7           wherein said coupling shaft is disposed in said first coupling recess, said second  
8 coupling recess and said coupling aperture, thereby axially aligning the first flight and the  
9 second flight.

1           3.       The hanger bearing assembly of claim 1, wherein said bearing block  
2 further comprises an O-shaped bearing including a U-shaped channel disposed along an  
3 outer circumference.

1           4.       The hanger bearing assembly of claim 1, wherein said bearing disk is  
2 comprised of stainless steel.

1           5.       The hanger bearing assembly of claim 1, wherein said bearing disk is  
2 approximately 2 inches in width and said lower bearing plate is approximately 1 inch in  
3 width.

1           6.       The hanger bearing assembly of claim 1, wherein said bearing disk is  
2       secured adjacent said first flange plate and said second flange plate with a plurality of  
3       threaded fasteners.

1           7.       The hanger bearing assembly of claim 1, wherein said upper bearing plate  
2       and said lower bearing plate are connected by a plurality of threaded fasteners.

1           8.       The hanger bearing assembly of claim 1, wherein said lower bearing plate  
2       extends radially outwardly beyond a periphery of the auger and is secured to a support  
3       member connected to the poultry chiller, said support member being disposed outside of  
4       said periphery.

1           9.       The hanger bearing assembly of claim 1, wherein a bottom segment of said  
2       lower bearing plate extends beyond a vertical centerline of said bearing disk such that  
3       said lower bearing plate supports the auger.

1           10.      The hanger bearing assembly of claim 1, further comprising:  
2               a coupling shaft having a first end and a second end, the coupling shaft being  
3       integral to said bearing disk;  
4               a first coupling recess disposed in the first flange plate, the first coupling recess  
5       being configured to receive the first end;  
6               a second coupling recess disposed in the second flange plate, the second coupling  
7       recess being configured to receive the second end; and

8            wherein said first end is disposed in said first coupling recess and said second end  
9            is disposed in said second coupling recess, thereby axially aligning the first and the  
10          second flights.

1            11.      The hanger bearing assembly of claim 1, wherein said bearing block  
2            further includes a first half and a second half, said support segment further includes a first  
3            bearing support surface configured to receive said first half, and said upper bearing plate  
4            further includes a second bearing support surface configured to receive said second half.

1            12.      The hanger bearing assembly of claim 1, wherein a first diameter of said  
2            bearing disk is greater than a second diameter of the auger shaft.

1            13.      A hanger bearing assembly for use in an auger type poultry chiller, the  
2            poultry chiller having a support member attached thereto, an auger with a first flight  
3            secured to a first auger shaft segment and a second flight secured to a second auger shaft  
4            segment, said hanger bearing comprising:  
5            a bearing disk secured between said first auger shaft segment and said second  
6            auger shaft segment, a bearing block disposed about said bearing disk, a lower bearing  
7            plate secured to said support member, said lower bearing plate being configured to  
8            receive said bearing block, an upper bearing plate configured to receive said bearing  
9            block wherein said upper bearing plate is secured to said lower bearing plate, thereby  
10          maintaining said bearing block adjacent said bearing disk and securing said auger to said  
11          lower bearing plate, and

12           deflector means mounted on said first auger shaft for urging the birds radially  
13 away from said hanger bearing.

1           14.    The hanger bearing assembly of claim 13, wherein said lower bearing plate  
2 extends radially outwardly beyond said first flight and said second flight and is secured to  
3 said support member.

1           15.    The hanger bearing assembly of claim 14, wherein said bearing block  
2 further comprises an O-shaped bearing including a U-shaped channel disposed along an  
3 outer circumference.

1           16.    The hanger bearing assembly of claim 14, wherein said bearing disk is  
2 secured between the first and the second auger shaft segments with a plurality of threaded  
3 fasteners.

1           17.    The hanger bearing assembly of claim 14, wherein said lower bearing plate  
2 further includes a support segment, said support segment extending beyond a vertical  
3 centerline of said bearing disk such that said lower bearing plate supports the auger  
4 independently of said upper bearing plate.

1           18.    The hanger bearing assembly of claim 14, wherein said bearing block  
2 further includes a first half and a second half, said support segment further includes a first

3 bearing support surface configured to receive said first half, and said upper bearing plate  
4 further includes a second bearing support surface configured to receive said second half.

1 19. A poultry chiller for reducing the temperature of previously eviscerated  
2 whole birds and the like, comprising:

3 a tank having a first end, a second end, and a water reservoir therebetween;

4 an auger extending substantially from said first end to said second end, said auger  
5 including a first flight secured to a first auger shaft segment and a second flight secured to  
6 a second auger shaft segment;

7 power means in driving relationship with said auger;

8 a hanger bearing assembly including a bearing disk secured between said first  
9 auger shaft segment and said second auger shaft segment, a bearing block disposed about  
10 said bearing disk, a lower bearing plate secured to said support member, said lower  
11 bearing plate being configured to receive said bearing block, an upper bearing plate  
12 configured to receive said bearing block; and

13 wherein said upper bearing plate is secured to said lower bearing plate, thereby  
14 maintaining said bearing block adjacent said bearing disk and securing said auger to said  
15 lower bearing plate.

1 20. The poultry chiller of claim 19, wherein said lower bearing plate extends  
2 radially outwardly beyond said first flight and said second flight and is secured to said  
3 support member.

1           21.     The poultry chiller of claim 19, wherein a first diameter of said bearing  
2                     disk is greater than a second diameter of said auger shaft.

1           22.     A poultry chiller for reducing the temperature of previously eviscerated  
2     whole birds, comprising:  
3             an elongated tank for holding chilled liquid and having an entrance for receiving  
4     the birds and an exit for delivering said birds,  
5             an auger extending along the length of said tank, said auger including a rotary  
6     shaft and at least two auger blades mounted about and longitudinally spaced from each  
7     other along said rotary shaft for moving the birds from the entrance of said tank to the  
8     exit of said tank,  
9             a bearing assembly positioned between said auger blades, said bearing assembly  
10    including a shaft bearing rotatably supporting said auger shaft and a hangar mounted on  
11    said tank and supporting said shaft bearing,  
12             a conical bird deflector co-axially mounted on said auger shaft at said bearing  
13    assembly and having a smaller end portion facing said entrance of said tank and a larger  
14    end portion facing said shaft bearing,  
15             whereby the conical bird deflector urges the birds away from the shaft bearing as  
16    the birds move about the shaft bearing.

1           23.     The poultry chiller of claim 22, wherein:  
2             said larger end portion of said conical bird deflector is substantially the same  
3     radial breadth as the radial breadth of said shaft bearing.

- 1           24.     The poultry chiller of claim 23, wherein:
- 2           said hangar is displaced from directly above said shaft bearing.